

Listing of Claims:

1. Previously Canceled.
2. (Previously Amended) A method for automated monitoring of quality of service of digital video material being distributed and played, the method comprising:

 embedding a signature in each frame of the digital video material by a program source device control by utilizing a hashing algorithm to produce the signature for each frame in the digital video material during encoding of the digital video material; and

 computing play-out statistics for the digital video material based on the signature by a program play-out device control.
3. (Original) The method of claim 2 further comprising providing a key identifier in a header of the signature and identifying inclusion of the signature based on the key identifier.
4. (Original) The method of claim 2 wherein embedding further comprises creating a meta-stream for the digital video material and encrypting the meta-stream.
5. (Original) The method of claim 4 wherein the meta-stream further comprises a header session.
6. (Original) The method of claim 5 wherein the header session further comprises an identifier, a length, and a time of play-out of the digital video material.

7. (Original) The method of claim 4 wherein the step of computing statistics further comprises capturing the meta-stream and computing the signature for an incoming stream of digital video material.

8. (Original) The method of claim 7 further comprising utilizing the signature of the meta-stream to trigger comparison with the computed signature of the incoming stream of digital video material.

9. (Original) The method of claim 8 further comprising computing a number of frames having a matching signature to the computed signature, identifying a time of play-out for the video stream, and determining a duration of the digital video material played-out.

10. (Original) The method of claim 9 further comprising storing the play-out statistics on a local storage device for the play-out device control.

11. (Original) The method of claim 10 further comprising transmitting the play-out statistics back for the program source device control for quality of service measurements.

12. (Previously Amended) The method of claim 2 wherein the digital video material further comprises a digital advertisement.

13. (Previously Amended) A system for automated monitoring of quality of service of digital video material being distributed and played, the system comprising:

a program source of viewing program data, the program source embedding a signature in each frame of digital video material within the viewing program data by utilizing a hashing algorithm to produce the signature for each frame in the digital video material during encoding of the digital video material;

a play-out device for receiving the viewing program data and computing play-out statistics for the digital video material based on the signature; and

a display device coupled to the play-out device for displaying video output of the viewing program data from the play-out device.

14. (Original) The system of claim 13 wherein the viewing program data further comprises a cable station program feed.

15. (Original) The system of claim 13 wherein the viewing program data further comprises a satellite program feed.

16. (Original) The system of claim 13 wherein the viewing program data further comprises an air wave program feed.

17. (Original) The system of claim 13 wherein the play-out device further comprises a set-top cable box.

18. (Previously Amended) The system of claim 13 wherein the play-out device further comprises a play-out device within a cable head-end.

19. (Original) The system of claim 13 wherein the play-out device further comprises a computer.

20. (Original) The system of claim 13 wherein the digital video material further comprises a digital advertisement.

21. (Original) The system of claim 13 wherein the program source further provides the signature in a meta-stream, the meta-stream including an identifier for the digital video material, a length of the digital video material, and a time for play-out of the digital video material.

22. (Original) The system of claim 21 wherein the play-out device further computes play-out statistics by capturing the meta-stream, computing a signature for the digital video material, and comparing the computed signature to the provided signature.

23. (Original) The system of claim 22 wherein the video play-out device further computes statistics by computing a number of frames in the digital video material having a match condition with the signature, identifying a time of play-out of the digital video material, and determining a duration of the digital video material actually played-out.

24. (Original) The system of claim 23 wherein the video play-out device stores the play-out statistics in a local storage and transmits the play-out statistics to the program source, wherein the program source measures quality of service for the digital video material from automated analysis of the play-out statistics.

25. Previously Canceled.

26. (Previously Amended) A method for achieving automated monitoring of quality of service of digital video material play-out in a video distribution and display system, the method comprising:

embedding video source material at a program source with hidden data and a meta-stream for uniquely marking a digital advertisement with the video source material, wherein the hidden data further comprises a signature generated by a hashing algorithm for each frame of the digital advertisement;

isolating the meta-stream and the digital advertisement from the video source material in a program play-out device; and

utilizing the meta-stream in the program play-out device to determine play-out statistics for the digital advertisement.

27. (Previously Amended) The method of claim 26 wherein the meta-stream further includes an identifier for the digital advertisement, a number of frames of the digital advertisement, and a time for play-out of the digital advertisement.

28. (Original) The method of claim 27 wherein the play-out statistics further comprise a start-time of play-out, a number of frames in the digital advertisement correctly decoded, and an end-time of play-out of the digital advertisement.

29. (Original) The method of claim 28 further comprising providing the play-out statistics to the program source, and analyzing the play-out statistics to determine quality of digital advertisement display.